

Are focus and givenness prosodically marked in Kinyarwanda and Rwandan English?

Author

Abstract

In this paper, we are interested in whether systematic variations in pitch, intensity and duration can be observed as a function of the focused or discourse-given status of a constituent in Kinyarwanda (Bantu JD61), and a relatively recent variety of “New English” in contact with this Bantu language. Kinyarwanda is a tone language, in which the information-structural notion of focus has been reported to be expressed through changes in word order, with focus appearing clause-finally (Kimyeni 1988, Ndayiragije 1999, Ngoboka 2016). In contrast, Standard English is well-known for the prosodic boost associated with narrowly focused words and the prosodic reduction of post-focal items. Cross-linguistically, the prosodic expression of focus and givenness is progressively being considered a marked feature. Zerbian (2015) predicts that it should not be found in a second language (L2), or a contact variety, if it is not already present in the first language of a speaker or a group of speakers. Our study finds no evidence that information focus, exhaustive focus or givenness systematically affect the prosody of Kinyarwanda. We also find no systematic effect of information structure in the variety of English spoken by our Rwandan participants, confirming that this is probably an area of English that is difficult to acquire.

Key words: focus, givenness, tone, Bantu, New English, Rwanda

## 1. Introduction

In this paper, we concentrate on the prosody of Kinyarwanda, a Bantu language spoken in Rwanda, as well as the emerging variety of New English in contact with this language, Rwandan English.<sup>1</sup> We are particularly interested in the prosodic expression of focus and givenness. Adopting the definition of these information-structural notions offered by Krifka (2007), we understand focus as indicating that alternatives are relevant for the interpretation of an expression, and givenness as referring to the fact that the denotation of an expression is present in the immediate common ground. Cross-linguistically, these information-structural notions have been shown to determine the shape of utterances, for instance through changes in prosody and/or word order (see among others, Reinhart 1995, Szendrői 2001, Rebuschi & Tuller 1999, Aboh, Hartmann & Zimmermann 2007, Hamlaoui 2009, Zimmermann & Féry 2010, Féry 2013). How focus is coded has attracted a lot of attention and the association between focus and prosodic prominence, which is systematic in many intonational languages, has sometimes been considered the result of universal tendencies (Truckenbrodt 1995, Büring 2010 and references therein).

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<sup>1</sup> Acknowledgements

The investigation of intonation in tone languages is still a relatively under-explored area, although see Downing & Rialland (2016) for a recent volume dedicated to African tone languages. Prosodic marking of focus has been systematically observed in tone languages such as Mandarin Chinese (Xu 1999), where focus significantly affects the shape and height of tones. It has also been observed in Bantu languages such as Chitumbuka (Downing 2006), Chimwiini (Kisseberth 2010) and Shingazidja (Patin 2010), for instance, in the form of prosodic phrasing.

Interestingly, some Bantu languages have been shown not to express focus prosodically. This is the case of Northern Sotho (Zerbian 2006, Swerts & Zerbian 2010) and Basaa (Makasso et al. 2016), for instance. Downing and Pompino-Marschall (2013) have argued against the long-standing claim that focus systematically attracts stress in Chichewa (Kanerva 1990). In their systematic phonetic study of the prosodic marking of focus in this language, they observe, instead, that focus is only sometimes prosodically expressed. To them, the process should be thought of as “emphasis prosody” and not as “focus prosody” (Gussenhoven 2004, Hartmann 2008, Ladd 2008).

When seen from the perspective of second language acquisition (SLA), the prosodic expression of focus and givenness seems to be typologically marked. Zerbian (2015) has shown that it is difficult to acquire and seems less likely to be found in contact varieties. In her study of Black South African English, Zerbian (2013) finds no evidence that  $f_0$  and intensity are significantly affected by focus.

The present study is meant to further document the English-Bantu contact situation. We are interested in the contact between Kinyarwanda, a Bantu language spoken in Rwanda (Bantu JD.61, Guthrie 1948), Uganda and the diaspora by approximately 12.000.000 speakers, and English, the national medium of instruction in the Rwandan education system since 2008. Being born in the early to mid-1990s, our speakers belong to the first generation of students who received a post-elementary education in English. Rwandan English is, in its present state, better characterized as a foreign language (EFL). Our study thus reports on how English as it is spoken by Bantu speakers who are learners in a post-colonization context: contrary to the situation in former British colonies, they have no history of prolonged contact with a model group of English native speakers (Schneider 2013: 141).

## **1.1 Kinyarwanda**

As is typical of Bantu languages, Kinyarwanda is a tone language. On the surface, it distinguishes two tone levels, High (H) and Low (L), and long vowels can carry a rising (LH) or a falling tone (HL) (Myers 2003, 2005). Phonologically, this opposition has been represented as a privative contrast between H and 0, as L tones are phonologically inert in this language. The mora is the tone bearing unit (2003).

When it comes to stress, Kinyarwanda has been observed to show both word penultimate and phrase penultimate lengthening (Myers 2005), which is reminiscent of what is found in other Bantu languages. Little however seems to be known as to the default prosodic phrasing of Kinyarwanda sentences and whether information structure can alter it.

As in other tone languages, the question arises as to whether tone also serves to express post-lexical meanings, that is, if the language can also be said to make use of intonation. According to Kimenyi (1980: 75), Kinyarwanda uses a rising intonation to express polar questions. In a recent study, Jarnow (2020) indeed observes a higher pitch at the end of polar questions than in declaratives. It is however unclear whether other pragmatic factors have an effect on Kinyarwanda prosody.

Kinyarwanda is an SVO language. As in many Bantu languages, syntax can be used to express information structure, and focus has traditionally been associated with the rightmost position within the clause or the verb phrase in Kinyarwanda (Kimenyi 1988, Ngoboka 2016). To achieve this, the language resorts to a variety of syntactic structures, including the well-studied object-subject reversal structure illustrated in (1) or the expletive construction in (2).

(1) Subject focus in Kinyarwanda semantic locative inversion (Ngoboka 2016: 200)

Ihemá	riraarámó	akeénshi	ba	mukeerarugeendo.
i-hemá	ri-ráar-mó	akeénshi	ba	mukeerarugeendo.
aug-5.tent	5.sm-sleep-loc18	often	2	1.tourist

“It is tourists who often sleep in the tent.”

(2) Subject focus in Kinyarwanda expletive construction (Ngoboka 2016: 206)

Haagiye	muu	náama	ba	ndé.
Ha-a-gi-ye	mu	náama	ba	ndé
16.sm-pst-go-perf	loc18	9.meeting	2	who

“Who went to the meeting?”

Cleft-sentences, such as the one in (3), are also commonly used to focus subjects. As shown by Nshemezimana (2016) and Lafkioui et al.’s (2016: 73) corpus study, cleft-sentences are actually more frequent than object-subject reversal in both written and oral natural speech.<sup>2</sup> Their observation was consistent with the intuition of our (relatively young and urban) speakers of Kinyarwanda, as none of them recognized the object-subject reversal structure as part of their grammar of the language.

(3) Subject focus in Kirundi cleft-sentence (Lafkioui et al. 2016: 81)

ni	je	nabátooye.
ni	je	N-á-ba-tóor-ye <sup>H</sup>
be	me	1sg.sm-pst-2pl.om-elect-pfv.rel

“It is me who elected you.”

It has been observed that in some of the languages that also use cleft-sentences to focus constituents, this structure is particularly appropriate in contrastive or corrective contexts (Skopeteas and Fanselow 2010, Destruel 2013). In our work with the Kinyarwanda speaker who participated in the preparation of our stimuli for the present study, cleft-sentences naturally emerged in subject focusing (we only tested subjects in a *wh*-focus context) as well as in some of

<sup>2</sup>Nshemezimana (2016) and Lafkioui et al.’s (2016) studies are based on Kirundi. Kinyarwanda and Kirundi are generally considered as two dialects of the same language (Grimes 1992).

the questions serving as context sentences. Object questions (*wh*-focus context) were systematically expressed by means of a cleft-sentence (see Section 2.1). Cleft-sentences did not however naturally emerge as the appropriate structure in our target sentences containing an object under corrective or contrastive focus. This is consistent with what has been reported by Lafkioui et al. (2016: 81): Although clefted objects are possible, they are much less frequent than clefted subjects. Lafkioui et al. also find no relation between the type of basic cleft-sentences used by our speaker (similar to example (3)) and the notion of contrast. In their corpus study, pseudo-clefts and inverted pseudo-clefts seem to be preferred to basic cleft-sentences to express a contrast. These structures however did not emerge in the contexts that were of interest to us (see Section 2.1).

Word order can also be altered to express the focusing of non-subjects. Examples (4) and (5) illustrate this, with the respective focusing of an object and an adverb.

(4) Object focus in Kirundi (Ndayirajige 1999: 410)

Yohani	a-á-oógeje	néézá	imiduga.
John	sm1-ps-wash.PERF	well	cars

‘John washed CARS well.’

(5) Adverb focus in Kirundi (Ndayirajige 1999: 410)

Yohani	a-á-oógeje	imiduga	néézá.
John	SM1-pst-wash.PERF	cars	well

‘John washed cars WELL.’

Our native speaker informant however considered sentences with a non-final focused object well-formed and appropriate in the considered contexts (see Section 2.1).

From a prosodic perspective, Kinyarwanda focus could be said to be made prominent by means of being aligned with the right edge of the clause or VP, and thus fit with Féry’s (2013) proposal that, cross-linguistically, the main prosodic correlate of focus is not prominence in a culminative sense, but alignment. As a lot remains to be understood regarding the realization of focus in tone languages, one of the goals of the present study is to determine whether Kinyarwanda focus is associated with specific acoustic correlates, and if different focus types are distinguished. If alignment is the main prosodic correlate of Kinyarwanda focus, instead of prosodic prominence, we might see, in particular through changes in duration, the insertion of extra prosodic boundaries in sentences in which a focused constituent is not rightmost. We are also interested in whether givenness is prosodically expressed.

## 1.2 English

In Rwanda, the history of contact between English and Kinyarwanda is a relatively recent one in comparison with other African countries. Kinyarwanda is the national language of Rwanda and the mother tongue of the vast majority of Rwandans (99.4% according to Republic of Rwanda 2005, Pearson 2014). English only became one of the three official languages in 1996, in a post-genocide Rwanda in which many Rwandan refugees were returning to the country who had been educated in English speaking countries such as Tanzania and Uganda (Kayigema and Mutasa 2014). In acquiring this status, English joined French, which has been an official language since 1962, and gained this status under Belgian influence. In contrast with the situation found in neighbouring or more distant multilingual countries, such as Kenya, South Africa or Nigeria, English is not used as a lingua franca in Rwanda. Instead, and partly due to the proximity with countries in which it is an official language, Kiswahili is reported to be used in commercial centers and on the nationally broadcast radio (Kayigema and Mutasa 2014).

According to Munyandamutsa (2005), English is used as a foreign language rather than as a native or second language in Crystal's (1997) sense. From Kayigema and Mutasa's (2014) perspective, English is very present in the everyday life of Rwandans. Other studies however suggest that the general level of proficiency in English remains poor among the Rwandan population and the use of the language in daily communication is limited (Sibomana 2014 and references therein).

Just as in numerous contact situations worldwide (Mesthrie & Bhatt 2008, Zerbian 2015), the use of English is thus primarily "stimulated by classroom education" in Rwanda (Kagwesage 2013). The Rwandan education system has a 6-3-3 formal education structure: 6 years of elementary education, 3 years of junior secondary education and 3 years of senior or technical secondary education (Pearson 2014). The official entry age is 7 years old and only the first three years of primary school are taught in Kinyarwanda. Since 2009, higher levels of education are taught in English instead of French (World Education News + Reviews, 2019, Pearson 2014). This is particularly important for us in that, due to their age at the time of the experiment (19-25 years old), almost all of our speakers had received a secondary education and were being university-educated in a system in which English has replaced French. Our speakers belong to the first generation of students who were educated in English and, as the change in medium of instruction was relatively sudden, existing ethnographies of language policies suggest that the level of proficiency of their teachers might have varied greatly and that some of them were also in the process of learning the language when delivering instruction in English (Pearson 2014). Other studies suggest that Kinyarwanda was probably regularly used alongside English, even in post-secondary education (Kagwesage 2013). We provide a more detailed description of our speakers in Section 2.3.

Unfortunately, we have not found many studies on the properties of the English spoken by Kinyarwanda speakers. The ones we found seem to primarily concentrate on the production and perception of English sounds (Munyandamutsa 2005, Uwambayinema 2016). Kayigema and Mutasa (2014: 242), who focus on the influence of English on the vocabulary of Kinyarwanda, mention in passing that the variety of English spoken in Rwanda could be influenced by French, as this was the second language of many Rwandans educated before the late 2000s, as well as East

African English. Sibomana (2010, 2014) notes that the mode of language teaching of English in Rwanda follows a typical foreign language education pattern and focuses more on grammar rather than fluency in oral language use.

In the present paper, we are interested in whether and how sentences are prosodically tailored to fit the context in which they are pronounced and in particular, how the notions of focus and givenness are prosodically expressed. In (standardized) English, focus is associated with higher pitch and intensity and longer duration. Additionally, English shows deaccentuation of discourse-given constituents, especially post-focal ones (Breen et al. 2010, Vander Klok et al. 2018).

### **1.3 Research questions**

The first question our study asks is where Kinyarwanda falls on the extended markedness scale of sentence prosody proposed by Zerbian (2015: 15). Extending Rasier and Hiligsmann's (2007) typology of sentence accent to include non-accentual languages, Zerbian proposes that languages can be distinguished according to whether their prosody, including intensity and duration, is primarily determined by structural constraints or by pragmatic ones. At one extreme, Zerbian groups languages such as Italian, Spanish, Sotho and Yucatec Maya, whose prosody is (almost only) structurally determined and only show what has been considered in previous literature as "neutral" prosody, in the sense of Reinhart (1995). At the other extreme, she groups languages in which prosody is (or can be) strongly pragmatically determined, such as English, German and Dutch. In addition to neutral prosody, these languages also show "marked" prosodic patterns that are meant to relate sentences to the context in which they were pronounced, that is, encode their information structure. In Zerbian's view, sentence prosody is unmarked in the languages that only show what we call here a neutral prosody and marked in the languages in which pragmatics can determine sentence prosody. In between the two types of languages, Zerbian places languages such as Romanian and French, whose prosody has been argued to sometimes be determined by pragmatic considerations, but to a lesser extent than the above-mentioned Germanic languages. French, for instance, has been shown not to distinguish as many focus types as English (Vander Klok et al. 2018) and not to express givenness as systematically either (Hamlaoui et al. 2012). Additionally, among the languages whose prosody is determined by pragmatic considerations, Zerbian further distinguishes languages according to whether they only mark focus, as is the case in Egyptian Arabic and Taiwanese, or whether they also mark givenness, as in the above West Germanic languages. Our first question is thus in which of Zerbian's types Kinyarwanda falls.

Second, we are interested in whether focus and givenness prosody (or the lack thereof) transfer onto Rwandan English. As pragmatically determined prosody is, according to Zerbian (2015), a marked feature, our prediction is that it should only be found in Rwandan English if it is present in Kinyarwanda. Additionally, as English is more of a foreign language (EFL) than a second language for our speakers and due to the generally limited fluency in oral language use reported in previous studies, it seems possible that our speakers do not express information structure in English, even if pragmatically determined prosody is found in their native language.

## **2. Methods**

## 2.1. Items and conditions

The experimental material was adapted from Vander Klok et al. (2018). There were 9 items in total: 4 items presented a transitive verb (Subject-Verb-Object) and 5 presented a ditransitive verb (Subject-Verb-Object-Object). As subject focus is usually expressed by means of non-canonical sentences in Kinyarwanda, we here concentrate exclusively on whether postverbal focus is prosodically marked.<sup>3</sup> Sentences with a ditransitive verb allowed us to observe whether the post-focal second object could be deaccented when it was discourse-given. They did not place the focused object rightmost but were still considered appropriate by our informant.

As is usually done in prosodic studies of focus and givenness, target sentences are placed in different contexts that manipulate their information structure. Here we only present detailed results for the four following conditions: all focus, *wh*-focus, contrastive focus (object) and corrective focus (object). We chose to test a variety of focus types to allow for the possibility that only emphatic or corrective focus induces a prosodic distinction.

In the contexts in (6) and (7), i.e. the all-focus condition in English and Kinyarwanda, respectively, none of the postverbal items is either given or focused, thus giving us a baseline for comparison with our other 3 narrow focus conditions. In this context, we expect that the target sentence will show what is considered a neutral prosody.

### (6) All-focus context (control) in English

A: I heard that Jack often travels to villages.

B: Yes, he gives books to children.

### (7) All-focus (control) in Kinyarwanda

A: Numvise ko Jak akunda gusura mu ntara.

n-umvise ko Jak a-kúund-a ku-suur-a mu n-táara

I-pst.understand that Jack 1.sm-like-fv 15-visit-fv loc18 10.provinces

“I heard that Jack often visits villages.”

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<sup>3</sup> Additionally, we collected sentences with subject focus and verb focus in English, as these could be expressed by means of a canonical sentence. We do not present detailed results here as the examination and analysis of these sentences did not yield results different from what we report about object focus: there were no prosodic cues indicative of the focused status of subject or verb, and no prosodic cues of givenness. The sentences were indistinguishable from all-focus sentences.

B: Yego, atanga ibitabo ku bana.  
yeego a-tang-a i-bi-tabo ku ba-áana  
yes 1.sm-offer-fv aug-8-books loc17 2-children

“Yes, he offers books to children.”

In the *wh*-focus condition in (8) and (9), the material resolving the *wh*-word is narrowly focused, while the rest of the target sentence is discourse-given.

(8) *Wh*-focus in English

A: What does Jack give to children in these big boxes?

B: He gives books to children.

(9) *Wh*-focus in Kinyarwanda

A: Ni iki Jak aha abana mu bikarito binini?  
ni ikí Jak a-ha a-ba- áana mu bi-karito bi-nini  
be what Jack sm1-give aug-2-children loc18 8-boxes 8-large

“What does Jack give to children in these big boxes?”

B: atanga ibitabo ku bana.  
a-tang-a i-bi-tabo ku ba-áana  
1.sm-offer-fv aug-8-books loc17 2-children

“He offers books to children.”

This type of focus is often referred to as “information focus” (Krifka 2007). In Standard English, we would expect the narrowly focused object to display a prosodic boost (i.e. higher pitch, intensity and duration), accompanied with a prosodic reduction of any following discourse-given material (i.e. the second object in our sentences with a ditransitive verb).

The next two conditions, contrastive and corrective focus, differ from the *wh*-focus condition in that they introduce an explicit alternative (“clothes”) to the item that is narrowly focused in our target sentences (“books”).

(10) Contrastive focus in English

A: I heard that Henri gives clothes to children.

B: Really, Jack gives books to children.

(11) Contrastive focus in Kinyarwanda

A: Numvise ko Henri atanga imyeénda ku bana.  
n-umvise ko Henri a-tang-a i-mi-eénda ku ba-áana  
I-pst.understand that Henri 1.sm-offer-fv aug-4-clothes loc17 2-children

“I heard that Henri offers clothes to children.”

B: Eee, Jak atanga ibitabo ku bana.  
Eee Jak a-tang-a i-bi-tabo ku ba-áana  
really Jack 1.sm-offer-fv aug-8-books loc17 2-children

“Really? Jack offers books to children.”

(12) Corrective focus in English

A: I heard that Jak gives clothes to children.

B No, he gives books to children.  
:

(13) Corrective focus in Kinyarwanda

A: Numvise ko Jak atanga imyeénda ku bana.  
n-umvise ko Jak a-tang-a i-mi-eénda ku ba-áana  
I-pst.understand that Jack 1.sm-offer-fv aug-4-clothes loc17 2-children

“I heard that Jak offers clothes to children.”

B: Oya, atanga ibitabo ku bana.

oya a-tang-a i-bi-tabo ku ba-áana  
no 1.sm-offer-fv aug-8-books loc17 2-children

“No, he offers books to children.”

The difference between the contrastive and the corrective condition lies in the way the antecedent to focus marking is introduced. While both context and target sentence can be true in (10) and (11) and a simple contrast is established between “clothes” and “books”, this is not the case in (12) and (13), where the narrowly focused item is meant to correct the alternative introduced in the context sentence. These focus types are often referred to as “exhaustive focus” (Krifka 2007). In Standard English, we expect the prosodic boost found on focus in these two conditions to be even greater than the one observed in the *wh*-focus condition, or for it to display “special prosodic patterns” (Krifka 2007, Selkirk 2002, Molnár 2002, Gussenhoven 2004) or more salient ones (Breen et al. 2010).

## 2.2. Experimental setting

The recordings were made in a quiet room in the Department of Mathematics at the University of Rwanda (Kigali), in the Summer 2016. Participants were sitting at a computer, wearing headphones and a head-mounted microphone. They simultaneously heard and were shown a context sentence and were asked to provide a target sentence as naturally as possible.

Participants took part in several studies in one sitting. Kinyarwanda and English were tested in separate experiments and the order in which each experiment was presented to participants varied so as to avoid a systematic effect of one language onto the other.

## 2.3. Participants

Our participants were all native speakers of Kinyarwanda (L1) and had a minimum of 8 years of learning English (L2) in an institutional setting. 13 participants took part in the experiment on Kinyarwanda (7 female, 6 male; age 19-25) and a subset of 7 participants also took part in the experiment on English (4 female, 3 male; age 19-25).

Most of the participants were from Kigali. Three came from other districts (Gisagara, Muhanga and Rulindo). They were all affiliated with the University of Rwanda (Kigali) at the time of the experiment and were studying topics as varied as Mathematics, Biology, Engineering, Geology, and Journalism and Communication. None of them had lived abroad and all declared to be speaking English every day.

All participants were financially compensated for their participation in the study.

## 2.4. Data analysis.

Using the Prosodylab-aligner (Gorman et al. 2011) and training on our own experimental data, we created a word-by-word and syllable-by-syllable alignment. Measures of maximum f0, maximum intensity and duration were extracted for all relevant constituents using PRAAT scripts (Boersma & Weenink). We calculated relative measures using the difference in semi-tones, the difference in log duration and the difference in db between the V and [O]<sub>F</sub> (transitive verbs), and the [O<sub>1</sub>]<sub>F</sub> and O<sub>2</sub> (ditransitive verbs), respectively. The data was analyzed in R (R Core Team 2013), using linear mixed effect models with the help of lme4 (Bates et al. 2014). We fit maximal models including random intercepts and slopes for items and participants (Barr et al. 2012). P-values were estimated with the Satterthwaite approximation (lmer Test, Kuznetsova et al. 2013).

### 3. Results

Careful listening and visual inspection of a sample of the data using PRAAT did not seem to reveal a systematic strategy for our speakers to make their sentences appropriate to the provided context, that is, to encode information structure prosodically. This seemed to be the case in both Kinyarwanda and in Rwandan English. Figures 1 to 4 (male speaker) provide representative pitch contours for one of our items (Jak atanga ibitabo ku bana, “Jack gives books to children”). Although there are minor variations in the realization of the sentence, what seems clearly visible here is that there does not seem to be a prosodic reduction of the discourse-given phrase “ku bana” (to children), which is the only word in Figure 1, 2 and 4 that carries a lexical high tone. In Figure 3, the subject of the sentence is overtly realized due to the contrast established with the context sentence. Downdrift, i.e. a lower ceiling for the final high tone than the initial one in our sentence (Connell 2011).

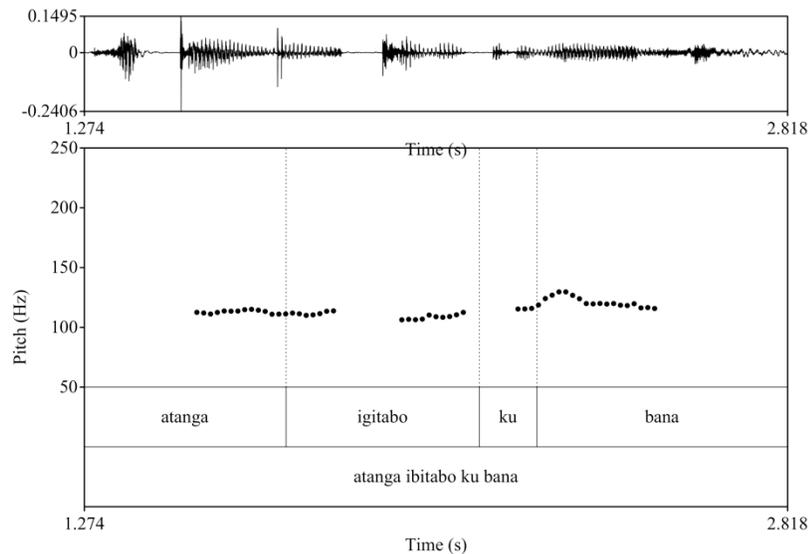


Figure 1: All focus condition (control) “He gave [books]<sub>F</sub> to children.”

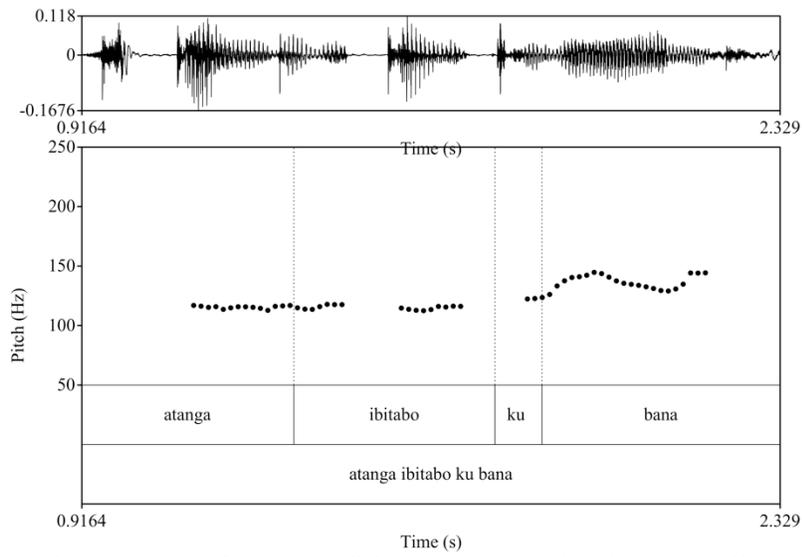


Figure 2: Wh-focus condition “He gave [books]<sub>F</sub> to children.”

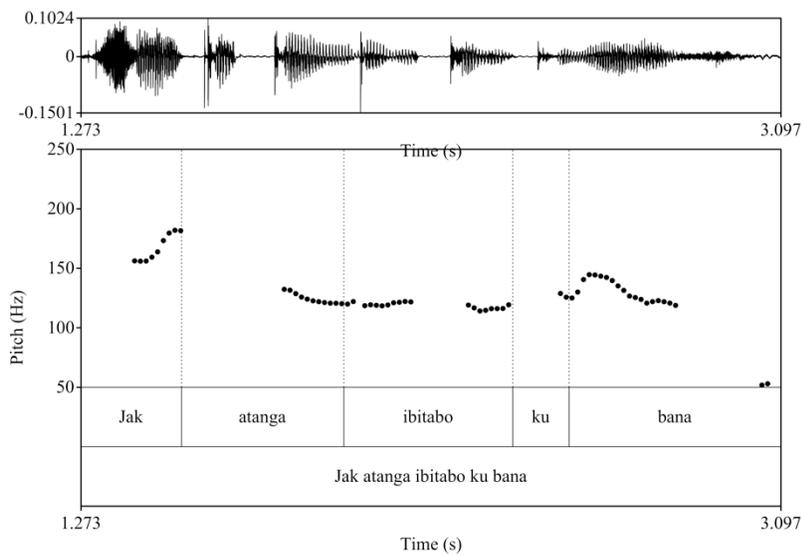


Figure 3: Contrastive focus condition “Jack gave [books]<sub>F</sub> to children.”

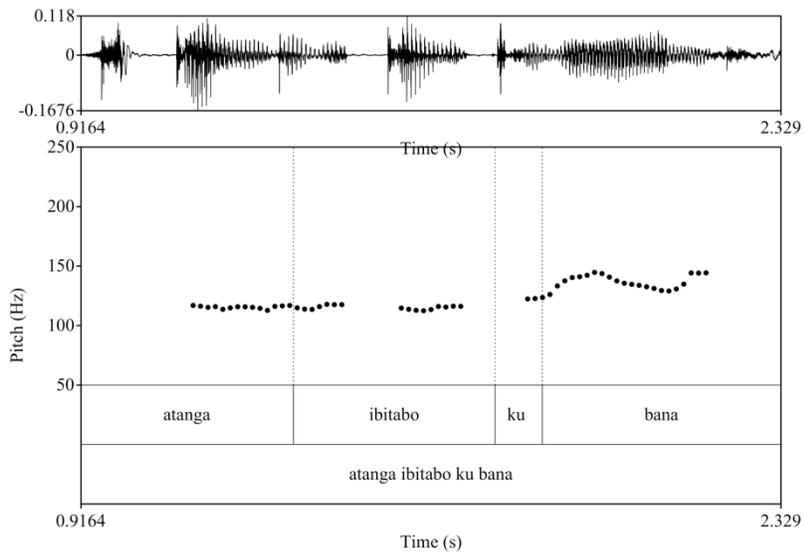


Figure 4: Corrective focus condition “he gave [books]<sub>F</sub> to children.”

Turning now to English, a similar lack of prosodic expression of focus and givenness is observed. The same item as above, realized by the same participant (male), is illustrated in Figure 5 to 8.

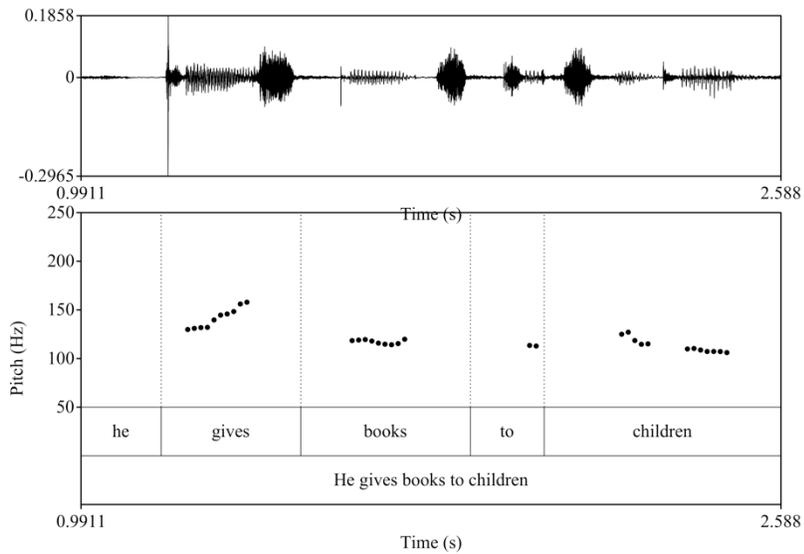


Figure 5: All focus condition (control) “He gave [books]<sub>F</sub> to children.”

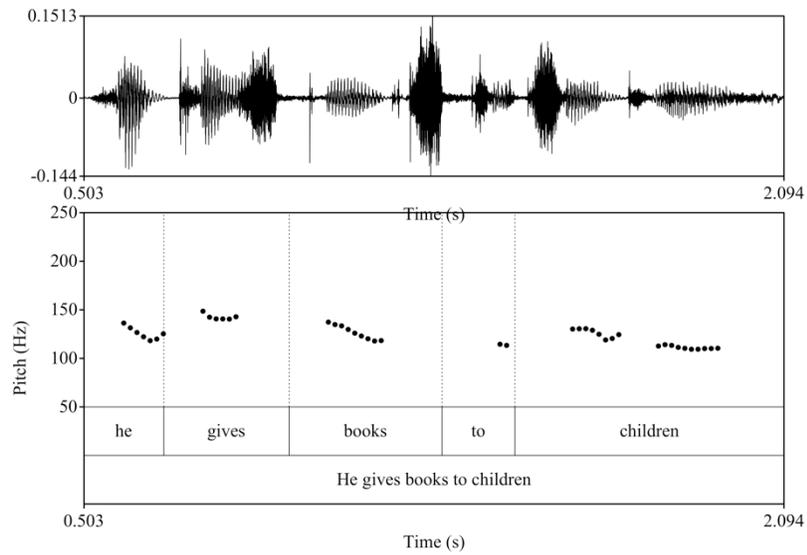


Figure 6: Wh-focus condition "He gave [books]<sub>F</sub> to children."

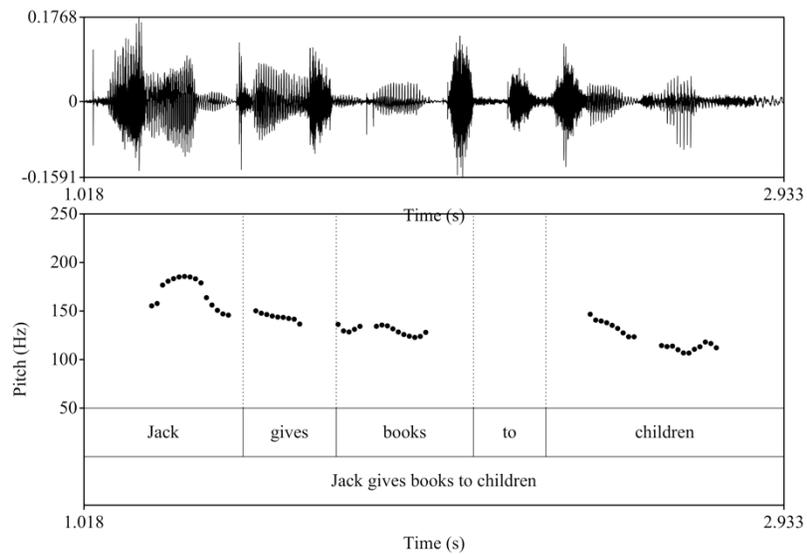


Figure 7: Contrastive focus condition "Jack gave [books]<sub>F</sub> to children."

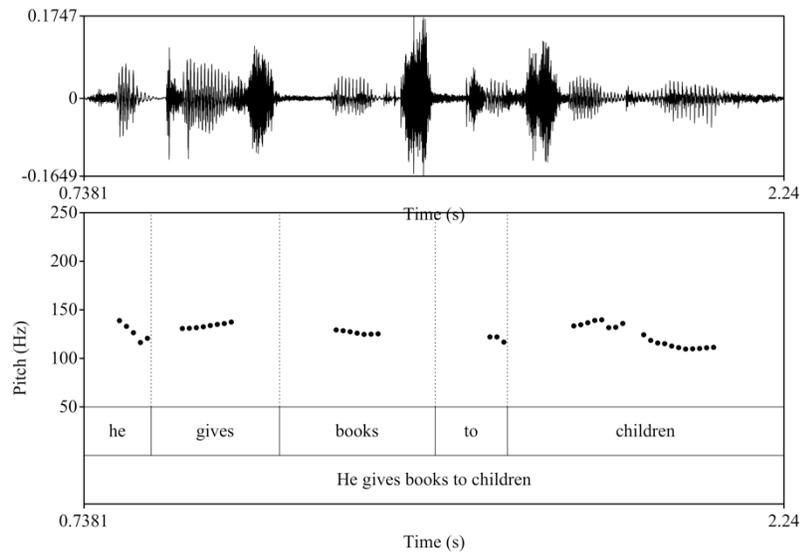


Figure 8: Corrective focus condition “he gave [books]<sub>F</sub> to children.”

Just as in Kinyarwanda, a downward trend can be seen and is most visible in Figure 7, the condition in which a full subject is realized. Impressionistically, there is no striking difference between the four sentences: The focused item is not made prosodically prominent and there is no reduction of the post-focal object in the three conditions in which it is discourse-given. A neutral prosody seems to be found in all four contexts. Interestingly, in sentences in which a full subject is realized, speakers seem to almost systematically phrase it with the verb. The general pattern that seems to emerge from our English data is that a prosodic constraint on minimal binarity at the phrase level (BinMin ( $\varphi$ ,  $\omega$ ), Selkirk 2000) outranks an interface constraint such as Match Phrase, requiring that every syntactic phrase form its own phonological phrase (Selkirk 2011). In terms of prosodic phrasing, Rwandan English seems to belong to the type of languages that do not allow single-word phonological phrases such as Xitsonga and Italian (Selkirk 2011) and thus differs from Standard English (Ladd 2008). More research is however needed in this area, also to determine to what extent this is similar to what can be observed in Kinyarwanda through penultimate lengthening and tonal processes, for instance. We leave this question open for future research.

Statistical analysis of fundamental frequency, intensity and duration confirm our impressions that neither focus nor discourse-giveness are systematically prosodically encoded by our speakers.

### 3.1. Fundamental frequency

As stated above, if focus is associated with prosodic prominence in Kinyarwanda and in Rwandan English, we expect narrowly focused words to display a boost in the form of a higher  $f_0$  than in the baseline condition (control). If givenness leads to being prosodically reduced, we expect given items to show a lower  $f_0$ . In addition, we may find a distinction between different types of foci, with contrastive and corrective focus showing a greater boost than *wh*-focus. Alternatively, if focus

needs to be aligned with a major prosodic boundary, we might observe the insertion of such a boundary between our two objects in sentences with a ditransitive verb.

Results are presented separately for sentences with a transitive verb and sentences with a ditransitive verb. While the former can inform us on whether post-focal givenness is expressed, the latter can allow us to observe whether pre-focal given items are reduced too. Figure 9 presents results of relative (left) and absolute (right) pitch across our 4 conditions for sentences with a transitive verb. The difference in pitch between the verb and the object does not significantly differ across conditions, indicating that (i) the new vs. given status of the verb does not significantly affect f0 and (ii) the new vs. narrowly focused status of the object has no significant effect on f0 either.

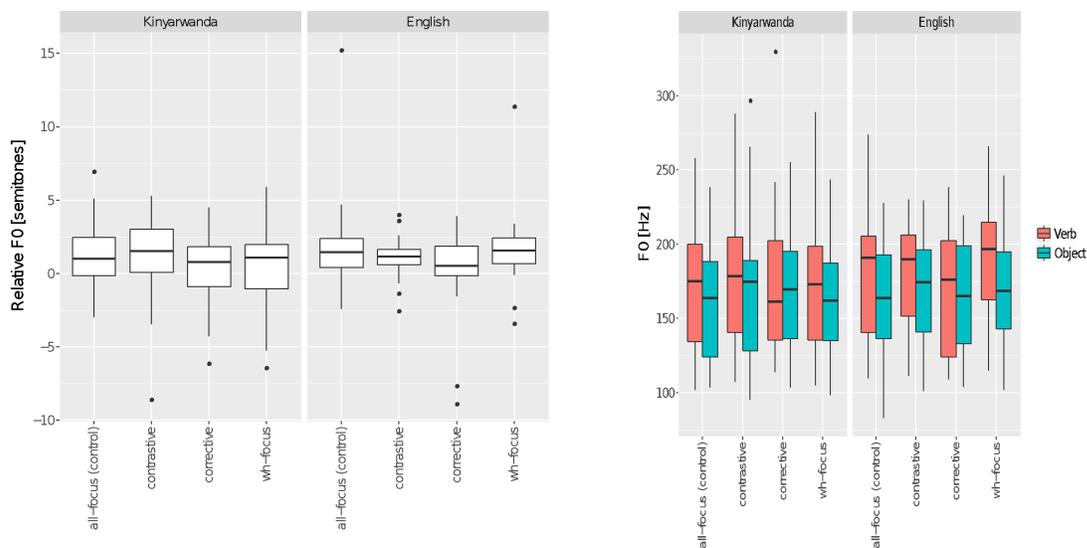


Figure 9: Pitch in sentences with a transitive verb

Figure 10 shows results of relative and absolute pitch for sentences with a ditransitive verb. The difference in pitch between the two objects does not significantly differ across conditions, confirming that focus and givenness have no significant effect on the f0 of Kinyarwanda and Rwandan English.

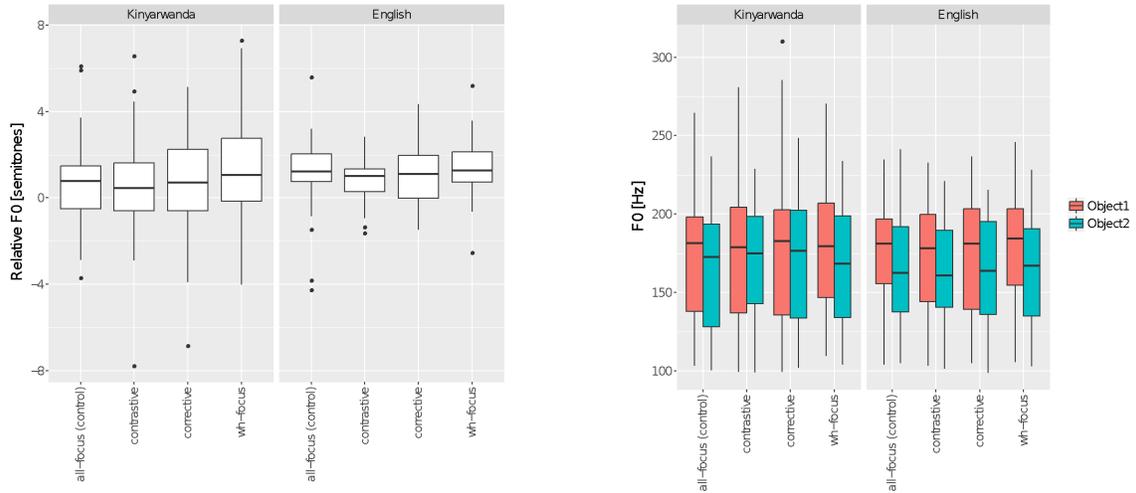


Figure 10: Pitch in sentences with a ditransitive verb

### 3.2. Intensity

The difference in intensity between the verb and the object is visible in Figure 11.

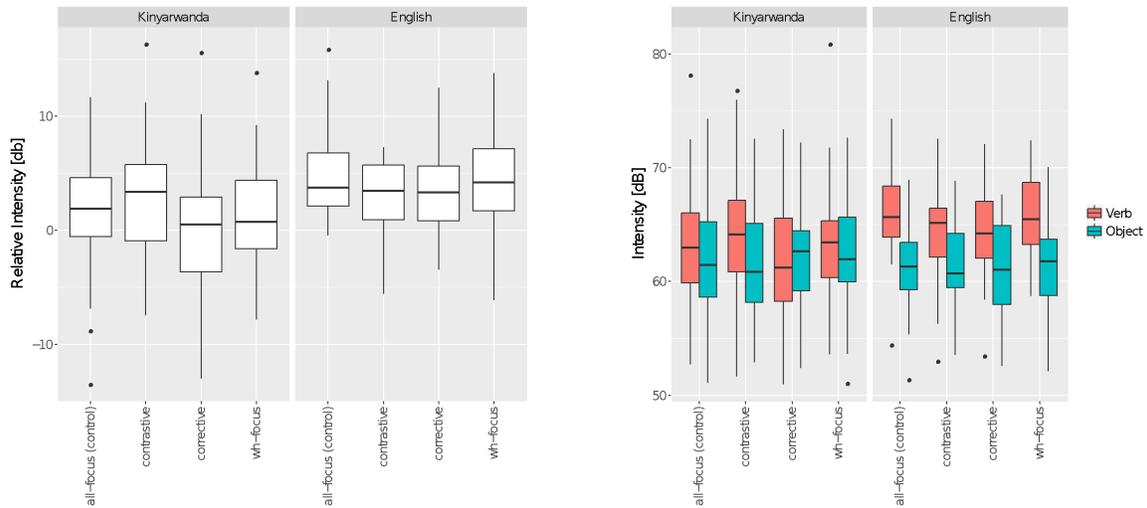


Figure 11: Intensity in sentences with a transitive verb

We have found no significant effect of focus or givenness on intensity: the verb is not significantly lower in wh-focus, contrastive and corrective conditions than it is in the all-focus condition and, conversely, the narrowly focused object does not show greater intensity in the wh-focus, contrastive or corrective conditions. This is the case in both Kinyarwanda and Rwandan English.

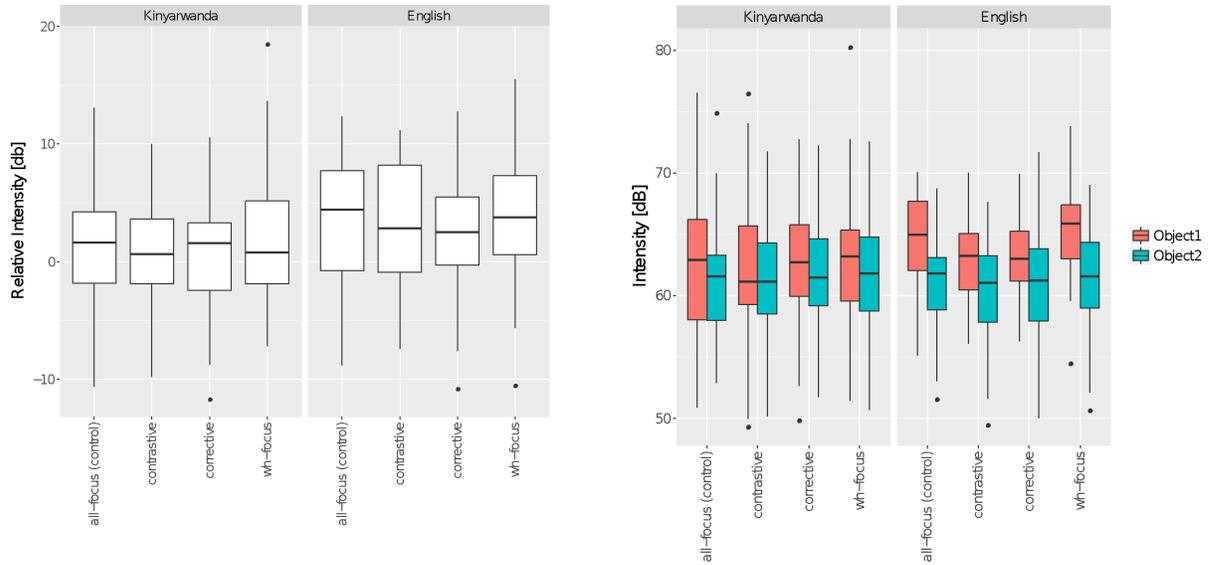


Figure 12: Intensity in sentences with a ditransitive verb

A similar result is found in sentences with a ditransitive verb. Results are visible in Figure 12 and confirm that neither the first object nor the second object is realized differently depending on its focused or given status, respectively.

### 3.3. Duration

Figure 13 and 14 respectively show the difference in duration between verb and object, and the difference in duration between first and second object.

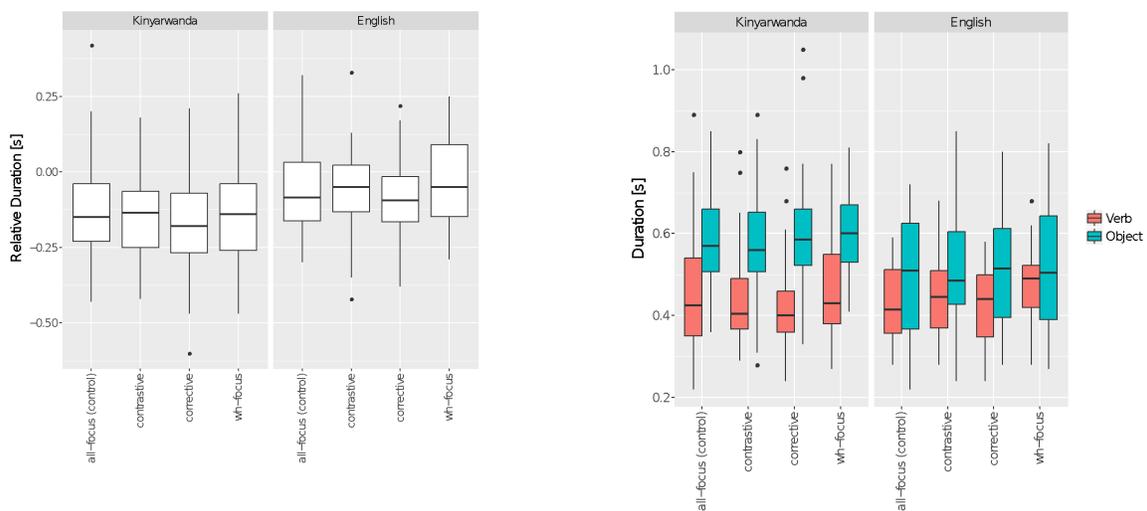


Figure 13: Duration in sentences with a transitive verb

If focus significantly affects duration, we expect narrowly focused objects to show an increased duration in focused conditions (contrastive, corrective and wh-focus), compared to their duration in the all-focus condition. Importantly, in the particular case of Kinyarwanda, if focus has an effect on phrasing and there is a preference for a rightward alignment of focus, the phrase penultimate lengthening observed by Myers (2005) might have an effect on the duration of our focused object in ditransitive sentences. This object might thus be longer in our focus conditions than in the control. Additionally, if givenness results in prosodic reduction, we expect our pre-focal given verbs and our post-focal sentence final objects to display a shorter duration in our 3 focused conditions than in the all-focus condition. As visible in both Figure 13 and 14, focus and givenness have no significant effect on duration in both Kinyarwanda and Rwandan English.

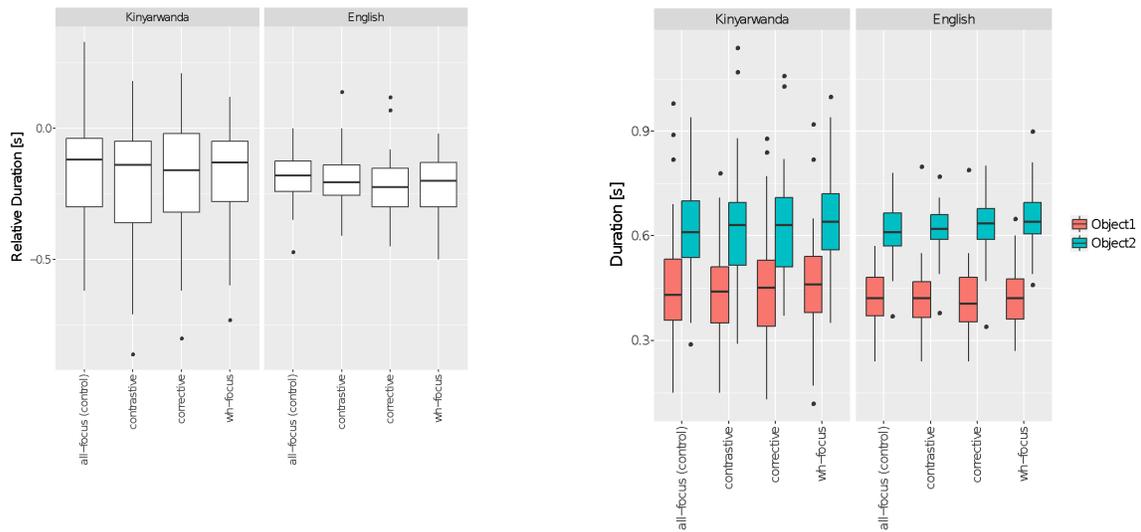


Figure 14: Duration in sentences with a ditransitive verb

#### 4. Discussion

Zerbian's (2015) extended markedness scale of sentence prosody predicts that, as expressing focus and givenness are marked linguistic features, if they are not found in the speakers' L1, they should not be found in their L2 either. The idea that speakers do not tailor their sentences to make them appropriate to a particular context seems counterintuitive and runs against what is found in many languages. As shown in Section 3, this prediction is however borne out: in both Kinyarwanda and Rwandan English, our speakers did not prosodically express focus. Pitch, intensity and duration were not significantly affected by information-structural status, and they did not distinguish the focus types distinguished in standardized varieties of English. Discourse-givenness was not prosodically expressed either, neither pre- nor post-focally.

Thus, we found that Kinyarwanda speakers largely fail to realize the intonational contours associated with focus and deaccenting in English. As English sentence final

stress is normally marked by syllable lengthening, increased intensity and a pitch accent, we see no phonetic evidence of any structural prosodic marking. At the same time, as the pitch contours clearly show downdrift and possibly binary phrasing, we can confirm that a non-English prosodic organization is imposed on the English by the Kinyarwanda speakers.

## **5. Conclusion**

In this paper, we were interested in whether systematic variations in pitch, intensity and duration could be observed as a function of the information status of a constituent in Kinyarwanda, and a relatively recent variety of “New English” in contact with this Bantu language. Kinyarwanda is a tone language, in which the information-structural notion of focus has been reported to be expressed through changes in word order, with focus appearing clause-finally (Kimenyi 1988, Ndayiragije 1999, Ngoboka 2016). In contrast, Standard English is well-known for the prosodic boost associated with narrowly focused words and the prosodic reduction of post-focal items. Cross-linguistically, the prosodic expression of focus and givenness is progressively becoming considered a marked feature. Zerbian (2015) predicts that it should not be found in a second language (L2), or a contact variety, if it is not already present in the first language of a speaker or a group of speakers, unless the two languages are typologically close. Standard English being an intonation language, the two languages considered here can be considered typologically distant. Our study has found no evidence that information focus, exhaustive focus or givenness systematically affect the prosody of Kinyarwanda. We have also found Zerbian’s prediction to be borne out: no systematic effect of information structure was observed in the variety of English spoken by the 7 participants who took part in our experiment on English, confirming that this is probably an area of English that is difficult to acquire.

Pragmatic considerations do not override structural considerations when it comes to the prosody of sentences in both Kinyarwanda and Rwandan English. The next step in the investigation of this variety of English might be to determine whether, in natural speech, the syntax of Kinyarwanda has any effect on the syntax of Rwandan English and if, instead of carrying prosodic prominence, focused items tend to be highlighted by appearing clause-finally. Note, again, that our informant judged all the sentences of our experiment as natural, even the ones in which the first object of a ditransitive verb was focused in situ and thus did not appear rightmost.

The history of contact between Kinyarwanda and English is still a very recent one and, in contrast with other contact situations, our speakers lack prolonged contact with a model group of L1 speakers. The results of the present study might thus also reflect the fact that English is still a foreign language and not yet a second language in Rwanda. As our speakers belong to the first generation of students whose medium of instruction was English, we hope to have provided a baseline for comparison for future studies of the prosody of Rwandan English.

## **Appendix: Experimental items**

English target sentences

Kinyarwanda target sentences

Jacques gives books to children.	Jacques atanga ibitabo ku bana.
Ania bought Peter shoes.	Ania yaguriye Peter ibirato.
Jean sold cows to farmers.	Jean yagurishije inka ku bahinzi.
Olive sends letters to her grandmother.	Olive yohereza amabaruwa kuri nyirakuru.
Jean sells tools to workers.	Jean agurisha ibikoresho ku bakozi.
Maya plants trees.	Maya ahinga ibiti.
Eric repairs houses.	Eric yubaka amazu.
Denise plays the guitar	Denise acuranga inanga.
Lola owns a car.	Lola afite imodoka ye.

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